A KEY TO THE NEOTROPICAL *LEPTOCONOPS* (DIPTERA: CERATOPOGONIDAE), WITH THE DESCRIPTION OF A NEW SPECIES FROM ARGENTINA*

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ABSTRACT. A key is presented for the recognition of the Neotropical subgenera and species of *Leptoconops*, and a new species from southwestern Argentina, *L. (Leptoconops) ricardoi* is described and illustrated. Besides, *L. (Holoconops) knowltoni* Clastrier & Wirth is recorded from southeastern Brazil.

RESUMEN. Clave para los *Leptoconops* neotropicales (Diptera: Ceratopogonidae), con la descripción de una nueva especie para la Argentina. Se presenta una clave para el reconocimiento de los subgéneros y especies neotropicales de *Leptoconops* y se describe e ilustra una especie nueva, *L. (Leptoconops) ricardoi*, proveniente del sudoeste de la Argentina. Además, se cita *L. (Holoconops) knowltoni* Clastrier & Wirth para el sudeste de Brasil.

INTRODUCTION

Biting midges of the genus *Leptoconops* Skuse are often extremely annoying bloodsucking pests in coastal or desert regions (Clastrier & Wirth, 1978). Wirth (1974) listed seven species of *Leptoconops* from the Neotropical region, included in three of the four subgenera recognized by Wirth & Atchley (1973) from North America: *L. (Holoconops) bequaerti* (Kieffer) from USA (Florida and Texas) and the circumcaribbean area; *L. (Leptoconops) brasiliensis* (Lutz) from Amazonas; *L. (L.) casali* Cavalieri & Chiossone and *L. (L.) petrocchiae* Shannon & Del Ponte from Argentina; *L. (L.) chilensis* Forattini from Chile; *L. (L.) venezuelensis* Ortiz from Venezuela; and *L. (Megaconops) floridensis* Wirth from USA (Florida), Jamaica and Colombia. Ronderos (1990) described *Leptoconops (Brachyconops) patagoniensis* from Argentina, bringing the first record of a species belonging to this subgenus for the neotropical region.

The purposes of this paper are to give the first comprehensive key including all the Neotropical subgenera and species, and to describe a new species, *Leptoconops (Leptoconops) ricardoi* from southwestern Argentina, collected with sweep net, strickingly in a subantarctic forest rather than in a coastal or desert region. Besides, the hitherto nearctic species *L. (Holoconops) knowltoni* Clastrier & Wirth is here recorded for southeastern Brazil.

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For an explanation of *Leptoconops* terminology, as well as the diagnoses of included subgenera see Wirth & Atchley (1973); for terminology of antennal sensory setae see Clastrier & Wirth (1978). The holotype and one paratype of this new species are deposited in the collection of the Museo de La Plata, Argentina, and the other paratype is deposited in the collection of the U.S. National Museum of Natural History, Washington D.C., USA.

Key to the neotropical *Leptoconops* (primarily for females)

1 . Female abdomen with lamellae broader than longer; frons bare; female antenna with 12 flagellomeres; tarsomeres 1-2 of fore leg armed with strong spines, other tarsomeres with slender, sharp, or inconspicuous spines only; tarsal claws of female each with basal, bifid tooth (subgenus *Brachyconops* Wirth & Atchley) .... *L. (B.) patagoniensis* Ronderos

1'. Female abdomen with elongate genital lamellae; frons with 0-5 pairs of mesal setae; female antenna with 10-12 flagellomeres; tarsi without strong ventral spines, or with these spines only at apices of basitarsi, or with a few moderately strong ventral spines on basitarsi and at apices of distal tarsomeres 2

2 . Female antenna with 10-11 flagellomeres; frons bare or with 1-2 setae only; palpus with deep enclosed sensory pit; male 9th tergum narrowed distally and bearing a median process or a pair of closely approximated apicolateral processes (subgenus *Holoconops* Kieffer) 3

2'. Female antenna with 12 flagellomeres; palpus without deep enclosed sensory pit; otherwise not entirely as above 4

3 . Two spermathecae; male 9th tergum with a distal median process ..... *L. (H.) bequaerti* (Kieffer)

3'. Three spermathecae; male 9th tergum with a pair of closely approximated apicolateral processes ..... *L. (H.) knowltoni* Clastrier & Wirth

4 . Frons bare or with at most one or two small setae; claws with basal tooth or bristle; tibial spurs conspicuous; spermathecae with short necks; male 9th tergum tapered with long, slender apicolateral processes (subgenus *Leptoconops* Skuse) 5

4'. Frons with 4-5 pairs of mesal setae; mandibular teeth absent; tarsal claws nearly straight without basal tooth or bristle; tibial spurs inconspicuous; 9th male tergum rounded and without apicolateral processes (subgenus *Megaconops* Wirth & Atchley) ..... *L. (M.) floridensis* Wirth

5 . Wing with costa extending to 0,20 of the total length ..... *L. (L.) petrocchiae* Shannon and Del Ponte

5'. Wing with costa extending to 0,40-0,50 of the total length 6

6 . Last flagellomere 2,0-2,6 times longer than broad; two or three elongated spermathecae 7

6'. Last flagellomere 4-5 times longer than broad; two pyriform spermathecae 9

7 . Last flagellomere 2,6 times longer than broad; 3rd palpal segment broad, with conspicuous, irregular sensory pit; hind tibial comb with four spines, the 2nd and 3rd from the spur longest 8

7'. Last flagellomere twice longer than broad; 3rd palpal segment slender, with small, circular sensory pit; hind tibial comb with four spines, the 2nd from the spur longest ..... *L. (L.) chilensis* Forattini

8 . Frons bare; palpal sensory organ about 1/3 of 3rd palpal segment length; 2nd palpal segment with a single seta. Scutum uniformly black. Wing with longitudinal veins not reaching wing margin; radial cell small. Two or three spermathecae, the ducts broad ..... *L. (L.) venezuelensis* Ortiz

8'. Frons with two mesal setae; palpal sensory organ about 2/3 of 3rd palpal segment length; 2nd palpal segment with three setae. Scutum dark brown, with three longitudinal, slightly paler bands. Wing with longitudinal veins reaching wing margin; radial cell large, evident. Two spermathecae, the ducts narrow ..... *L. (L.) ricardoi sp. n.*

9. Last flagellomere with conical apex; 3rd palpal segment pale brown, subequal to 4th, which bears a basal pale ring; longitudinal veins extending to wing margin ..... *L. (L.) brasiliensis* (Lutz)

9'. Last flagellomere with blunt apex; 3rd palpal segment 1,5 times as long as 4th, both entirely dark brown; longitudinal veins obsolete at wing margin ..... *L. (L.) casali* Cavalieri & Chiossone

Leptoconops (Leptoconops) ricardoi *sp. n.*
(Figs. 1-10)

Female. Wing length 0,92 (0,88-0,96, n = 3) mm; breadth 0,41 (0,39-0,46, n = 3) mm. *Head*: Dark brown. Eyes (Fig. 1) bare, moderately separated, separation approximately to diameter of six ommatidial facets (0,30 of total head width); vertex with a row of 8-9 long setae; frons with two pairs of mesal setae. Antenna (Fig. 2) with pale scape, pedicel dark brown; flagellum dark brown, with lengths of flagellomeres in proportion of 7-5-4-5-5-5-5-5-5-5-5-17; last flagellomere 2,6 times longer than broad; flagellomeres 1-10 with basal black setae (sba) and black external setae (sex), 1-11 with sensory setae (ss), 2-11 with semiverticils (vert) of colorless, hyaline hairs, 12 with subapical black seta (sap) (Figs. 2, 3); antennal ratio 1,02. Palpus (Fig. 4) dark brown, apices of 1st and 2nd segments and narrow base of 4th segment whitish; lengths of segments in proportion of 12 (I+II)-17-15; palpal ratio 2,12; 2nd segment with three setae; 3rd segment broad, sensory organ about 2/3 of 3rd segment length. Mandible with 25 small teeth; P/H ratio 0,85 (0,82-0,87, n = 3). *Thorax* (Fig. 5): Dark brown, densely clothed with setae. Scutum with three longitudinal, slightly paler bands; scutellum with 3-4 pairs of setae. Legs (Fig. 6) dark brown, including tarsi; hind tibial comb (Fig. 7) with rather small spur, and four spines in proportion of 8-15-15-12; tarsomeres 1-2 on all legs with a pair of apical spines; 4th tarsomeres subcylindrical; tarsal claws short, with basal bristle. Wing (Fig. 8) with costa extending to 0,40 of the total length; microtrichia abundant, membrane infuscated; radial cell large, evident, stigma dark brown; longitudinal veins reaching wing margin. Halter entirely dark brown. *Abdomen*: Dark brown. Genital lamellae (Fig. 9) long and narrow; 9th sternum with deep, oval excavation apparently forming brace for gonopore; 8th sternum with deep, rounded caudomedian excavation, lateral margins with two long hairs. Two ovoid, subequal spermathecae (Fig. 10) 0,049 by 0,041 mm, ducts narrow (0,003 mm).

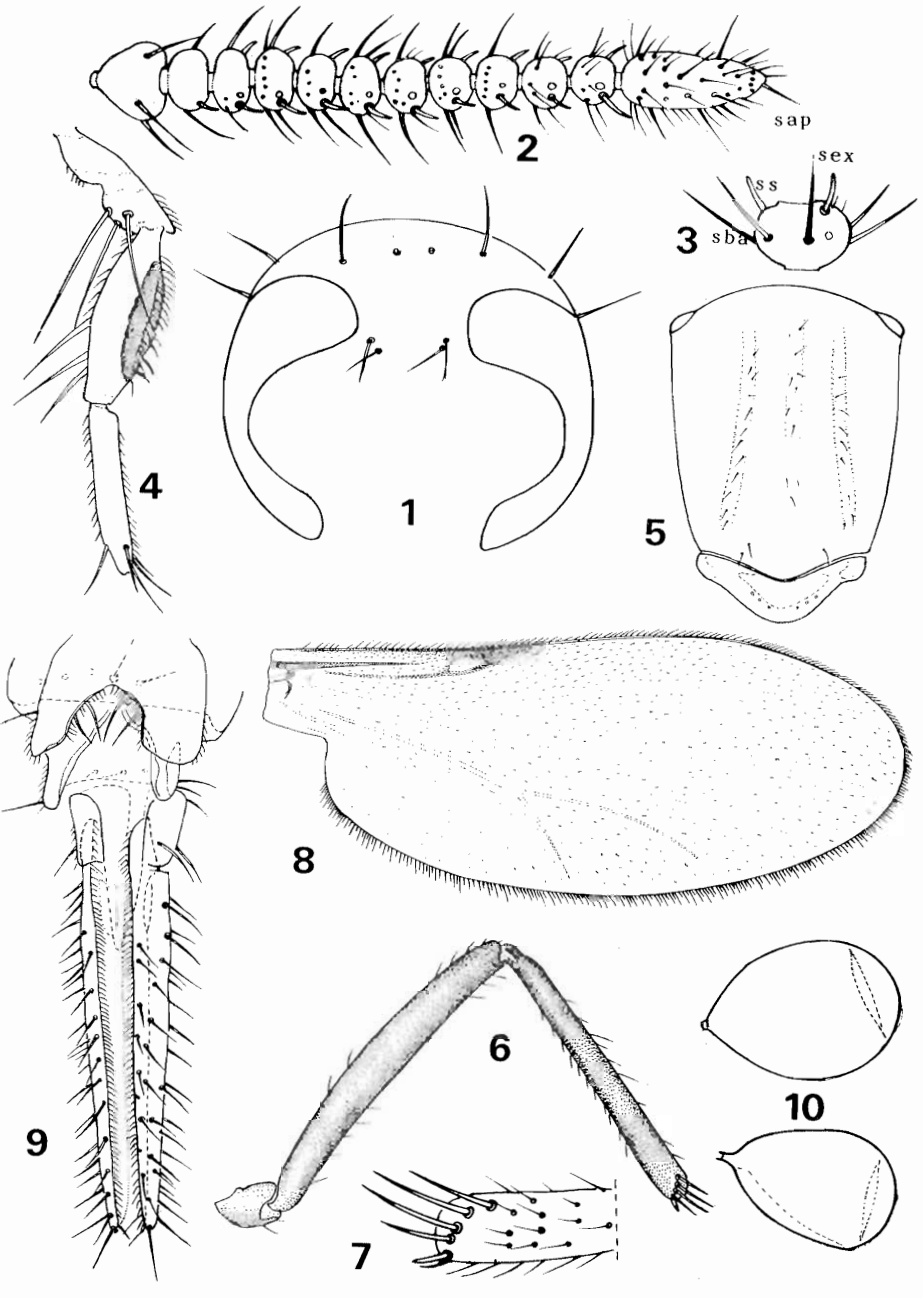
Male. Unknown.

Distribution. Known only from the type-locality, which is in the temperate subantarctic forest of Argentina.

Types. Holotype female and two female paratypes, Argentina, Río Negro Prov., Parque Nac. "Nahuel Huapi", 6,5 km E Cascada de los Alerces, 24-I-1988, G. Spinelli, sweep net.

Discussion. This new species is similar to *L. (L.) venezuelensis*. Characters for separating both species are given in the key.

We are pleased to name this species in honor of Dr. Ricardo A. Ronderos (Museo de La Plata, Argentina).



Figs. 1-10. *Leptoconops (L.) ricardoi* sp. n., female. 1, eyes separation; 2, flagellum; 3, 5th flagellomere; 4, palpus; 5, scutum and scutellum; 6, hind leg (trochanter, femur and tibia); 7, hind tibial comb; 8, wing; 9, genital lamellae; 10, spermathecae.

Leptoconops (Holoconops) knowltoni Clastrier & Wirth

Leptoconops (Holoconops) knowltoni Clastrier & Wirth, 1978: 26 (female, male; distrib.; figs.).
Leptoconops kerteszi Kieffer; Jones *et al.*, 1972: 507 (Texas, biting horse, possible vector of Venezuelan equine encephalomyelitis).
Leptoconops (Holoconops) kerteszi Kieffer; Wirth & Atchley, 1973: 45 (in part).
Leptoconops (Holoconops) bequaerti (Kieffer); Wirth & Atchley, 1973: 39 (in part; record from Padre Island, Tex.).

Distribution. USA (Arizona, California, Idaho, Montana, Nevada, Texas, Utah) and northwestern Mexico (Sinaloa). New Record: Brazil, Santa Catarina, Nova Teutonia, IX-1964, F. Plaumann, 2 females.

Discussion. This species is a member of the *kerteszi* complex, revised by Clastrier & Wirth (1978), who recognized 11 species from North America. This finding of *L. (H.) knowltoni* in southeastern Brazil constitutes the first record for the Neotropical region of a species belonging to the *kerteszi* complex. *Leptoconops (H.) knowltoni* can be distinguished from the other species of the *kerteszi* complex by the following combination of characters: antenna with last flagellomere bearing one median black seta; sensory seta VI in alignement with others; wing with stigma hyaline, triangular, with sharp-pointed tip; mid basitarsus without median spines; mesonotum with 4-8 anterolateral and 3-4 posterolateral setae; 3rd palpal segment massively expanded, sensory pit more or less cornuate, with small pore; spermathecae with well developed diverticulum. Male 9th tergum without dorsal process, setae of posterior margin located close together; dististyle with three ventral setae in basomedian position, ventral margin prolonged distally beyond distal margin, lamelliform expansion extremely developed and broadly surpassing spatulate lobe.

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